

The trouble with 'evolutionary biology'

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Just recently, in November 2006, the journal *Behavioral and Brain Sciences* published an article by Alex Mesoudi, Andrew Whiten and Kevin Laland, all of the Centre for Social Learning and Cognitive Evolution at the University of St Andrews. Entitled 'Towards a unified science of cultural evolution', the article sets forth a programme for integrating the study of cultural evolution with the science of evolutionary biology within a single conceptual and theoretical framework, namely one based on the neo-Darwinian synthesis of variation under natural selection with the principles of population genetics. Programmes of this kind have been advanced many times before, nearly always by biologists and psychologists rather than by social or cultural anthropologists. The article in question is no exception: of the three authors, two (Mesoudi and Whiten) are psychologists and the third (Laland) a biologist.

What caught my eye about this article, however, was that its mission to unify the study of culture along Darwinian lines was accompanied by an unequivocally negative assessment of the current state of sociocultural anthropology. The latter is portrayed as a discipline that, having forsaken rigorous scientific inquiry for the nihilistic and self-destructive introspections of post-modernism, has not only failed to progress but has lost all credibility within the broader field of the behavioural sciences. Indeed, the authors conclude with an open invitation to sociocultural anthropologists to abandon their sinking ship and to join with them in the project of building a truly scientific theory of culture (375).¹

I write on the assumption that few social or cultural anthropologists read *Behavioral and Brain Sciences*. It is rarely cited in their works. Outside of anthropology, however, the journal enjoys a deservedly high profile, and its many readers cover a broad spectrum of interdisciplinary approaches to the study of human evolution, cognition and behaviour. My first aim, then, is to draw attention to an important article that is likely to reinforce a particular impression of sociocultural anthropology in the minds of readers from multiple disciplinary backgrounds.

One of the admirable features of *Behavioral and Brain Sciences* is the open peer commentary that follows every target article. In this case there are no fewer than 22 comments. Apart from one somewhat sceptical intervention by kinship theorist Dwight W. Read, the only anthropological contributions to the commentary are from biological anthropologists, while the majority of comments come from other branches of biology, archaeology, psychology, philosophy, linguistics and economics. Although this is a good index of the breadth both of the journal and of interest in this particular article, it also seems to confirm what many of the commentators openly suspect, namely that anthropologists of a sociocultural complexion have no wish to participate in the project of evolutionary science and are in many cases downright hostile to it.

My second aim, then, is to understand why social and cultural anthropologists have such a problem with this project. On the basis of my own experience of trying to engage with evolutionary biology, I shall show why such engagement is made extremely difficult, if not impossible, by the intransigence of evolutionary biologists themselves – or more specifically those of neo-Darwinian persuasion – whose unshakable belief in the resilience of the Darwinian paradigm and refusal to heed alternatives that might hold promise of a more coherent synthesis blocks any sort of dialogue. Finally, however, I want to insist on

the need to continue working at this engagement, however difficult and frustrating it may be. It is absolutely critical to the future standing of anthropology within the domain of the human sciences that we should do so.

Before proceeding, I should enter two qualifications. First, what passes as neo-Darwinism today is a far cry from the kind of programme envisioned by the architects of the so-called 'new synthesis' of mid-20th-century evolutionary biology – giants such as Julian Huxley, Ernst Mayr and Theodosius Dobzhansky, all of whom engaged fruitfully and respectfully with leading anthropologists of their day (Ingold 1986). My concern here is with the neo-Darwinian paradigm in its contemporary incarnation, which is why, in the title of this article, I have placed 'evolutionary biology' in quotation marks. This is intended as shorthand for 'evolutionary biology as it is understood in the article by Mesoudi, Whiten and Laland'.

There are, of course, other approaches. Many practising evolutionary biologists, especially those seeking new ways of articulating the relation between evolutionary and developmental processes, are openly critical of the neo-Darwinian programme in its present form. Among these newer approaches are evolutionary developmental biology ('evo-devo') and developmental systems theory (DST), and proponents of these approaches are among the more sceptical commentators on the target article. My grouse is not with them. On the contrary, I believe their objections to neo-Darwinism have much in common with those often expressed by social and cultural anthropologists, and that this commonality holds real promise for a future synthesis. It is beyond the scope of this article to elaborate on the form such a synthesis would take, though I have done so elsewhere (Ingold 2001, 2004). My present purpose is more limited: I aim to show that nothing causes more trouble, in the attempt to integrate evolutionary biology with sociocultural anthropology, than 'evolutionary biology' itself.

Matching sub-fields

I begin by summarizing the strategy by which Mesoudi et al. establish the complementarity of approaches to 'evolutionary biology', on the one hand, and to the evolution of culture on the other. This is to lay out the various sub-fields of 'evolutionary biology', in their macro-evolutionary and micro-evolutionary divisions, and to match each sub-field with a corresponding branch in the science of culture (330-331).

Macro-evolutionary biology, according to the authors, comprises the three sub-fields of *systematics*, *biogeography* and *palaeobiology*. In 'evolutionary biology', systematics is concerned with the reconstruction of phylogenetic relationships among species based on a mapping of their shared characteristics. This is said to correspond, on the cultural side, with what the authors call *comparative anthropology*, whose aim, they tell us, is to 'reconstruct the history of groups of people based on cultural traits, such as language, tools, customs or beliefs' (332). Biogeography – 'the study of how biological, ecological, geographical and historical factors determine the spatial distribution of organisms' (335) – is matched up with the sub-field of *cultural anthropology*. One of the main goals of cultural anthropology, the authors claim, has similarly been 'to document and map the worldwide distribution of cultural traits', as exemplified in George Peter Murdock's celebrated *Ethnographic atlas* (335). As for palaeobiology, this is matched with the sub-field of *evolutionary archaeology* (334).

1. Here and in what follows, numbers refer to pages in Mesoudi, Whiten and Laland (2006).

2. Here, and in what follows, by 'anthropology' I refer specifically to social and cultural anthropology, unless otherwise stated.

Micro-evolutionary biology, too, comprises three sub-fields, of *population genetics*, *molecular genetics* and *evolutionary ecology*. Population genetics is further divided into three branches – ‘theoretical’, ‘experimental’ and ‘field’ – and these, as well, are said to have their equivalents in the study of culture. Theoretical population genetics corresponds to those theories of cultural evolution or gene-culture co-evolution that seek to model culture change on similar mathematical principles, treating innovation as equivalent to mutation, and differential adoption as equivalent to natural selection (337). Experimental population genetics, perhaps mercifully, has no anthropological equivalent, but is compared to some of the games played in and out of the laboratory by psychologists and economists, designed to simulate processes of cultural transmission (338-339).

Field studies do, however, have their counterparts in cultural anthropology, as well as in social psychological ‘rumour research’ and sociological research on the diffusion of innovations. Anthropological field studies, the authors explain, ‘have examined the acquisition of cultural knowledge in traditional societies. Members of a community are typically interviewed to find out from whom they acquired their knowledge and skills’. Moreover, to be done properly, anthropological fieldwork should be guided by the ‘formalised hypotheses, methods and measures of selection employed within evolutionary biology’ (340).

Finally, the authors match the sub-field of molecular genetics with *memetics* (which exploits the analogy between the storage and replication of genetic information in DNA molecules and the storage and replication of cultural information in the brain) and the sub-field of evolutionary ecology with that of *human behavioural ecology*. Whereas evolutionary ecologists study how organisms interact with and adapt to their environments, human behavioural ecologists are said to study the environmental adaptations and interactions of ‘cultural traits’ (341-342). Introduced initially as analogous to the genetically transmitted characteristics of organisms, these traits of culture have now become entities in themselves, adapting to their environments as organisms do. Mesoudi et al. conclude their discussion of the methods of human behavioural ecology by remarking that ‘*like those of anthropology in general*, [these methods] involve observing and recording behaviour in natural environments, typically in small communities within traditional societies’ (342, my emphasis).

Having thus lined up the various sub-fields in the study of both biological and cultural evolution, and found a good match in every case, Mesoudi et al. claim that human culture exhibits the same ‘key Darwinian evolutionary properties’ (329) that have been demonstrated in biology, and therefore that the methods and approaches already developed in evolutionary biology should, albeit with minor qualifications, be equally applicable to studying the evolution of culture.

A game we cannot afford not to play

Anthropological colleagues may be forgiven for reacting with some dismay to the characterization of their subject offered by Mesoudi et al. These authors appear to have little understanding of what contemporary anthropology is about.² Their characterization is not merely anachronistic. It is also an affront to the millions of intelligent human beings for whom traditions are real and important but who are not, on that account, trait-bearing cultural clones whose only role in life is to express – in their behaviour, artefacts and organizations – information that has been transmitted to them from previous generations (369), only to have their performances observed and recorded in their natural habitat, along with other forms of wildlife, by intruding scientists.

The genealogy of cultural traits that Mesoudi et al. propose, under the rubric of ‘comparative anthropology’, is a parody of history in which agency, power and social relations are but the ephemeral effects of proximate causes whose ultimate source is supposed to lie in capacities and dispositions bequeathed to individuals as an ancestral legacy, independently and in advance of their life in the world. It is ironic that while Mesoudi et al. are quick to dismiss the ‘erroneous’ view, allegedly persistent in anthropology, that cultural evolution entails a progressive advance from primitive beginnings to modern science and civilization, precisely such an advance is presupposed by the distinction, upon which their entire scientific project is based, between people in ‘traditional’ communities whose behaviour is governed by evolved traits, and rational people like themselves who are in a position to study them. Rejecting the idea of progress as a measure of cultural evolution does not prevent them, as we shall see, from unreservedly endorsing the idea when it comes to the history of their own science. They appear to be blind to the political implications of such double standards.

The easiest way for anthropologists to respond to the misapprehensions of ‘evolutionary biology’ is simply to take no notice, which is for the most part what they have done. That anthropology has largely withdrawn in recent decades from public intellectual debate on the great questions of the nature, evolution and destiny of human beings is, writes Thomas Hylland Eriksen in his new book *Engaging anthropology*, ‘a fact which needs no further qualification’ (2006: 23). I think he is right. There are all sorts of reasons for this, many of them entirely cogent. They include a principled refusal to accept on trust the dominant terms of debate or the axioms underpinning them, an insistence on balanced, nuanced judgement grounded in a deep knowledge of particular places and peoples, and a sensitivity to the political contexts of anthropological studies and the ways they might be read not only by audiences at home but also by those among whom they were carried out.

Other reasons are less defensible. They boil down to a collective loss of confidence that, on the one hand, fosters interminable, introverted ruminations on the direction and fate of something called ‘the anthropological project’, which remains poorly defined and in which non-anthropologists can hardly be expected to take any interest at all. On the other hand, it encourages writers to take refuge in a jungle of largely incoherent scholaresse and to name-drop in ways that absolve them of the responsibility to explain what they mean, rendering their texts accessible only to an inner circle conversant with the relevant name-tags and what they stand for. Anthropologists, as Eriksen crisply remarks, ‘sometimes seem to write badly on purpose’ (ibid.: 104).

By contrast the cause of neo-Darwinian ‘evolutionary biology’ – along with its bastard and somewhat quarrelsome offspring, evolutionary psychology and memetics – is being very effectively served by a coterie of authors with the confidence and capacity to write rather well, and who have attracted a massive popular following. They include such names as Richard Dawkins, Daniel Dennett, Steven Pinker and Susan Blackmore, all of whom are referenced in the article by Mesoudi et al., with two (Dennett and Blackmore) also being among the commentators.

A chapter of Eriksen’s book is devoted to the works of these authors, and others who write in the same vein. He finds their arguments crude and one-sided, and I am inclined to agree with him. His point, however, is that if people outside of anthropology have little knowledge or understanding of what the subject is about and fill the void with outlandish presumptions of their own, then anthropologists have only themselves to blame. Either they do not know themselves what anthropology is, more often

than not confusing it with ethnography, or – if they do know – they have failed to tell anyone else, at least in a language that others can be expected to comprehend. Thus neo-Darwinian propagandists, finding a field of study apparently abandoned in disarray by its rightful inhabitants, are bound to win hands down. The consequences are catastrophic. ‘Whatever one’s feelings about the new Darwinism,’ writes Eriksen, ‘here is a game that anthropologists and other social scientists cannot afford not to play’ (ibid.: 55).

It is not however a light sport, as I can testify from my own experience. The odds against scoring any success are so high as to deter all but the most thick-skinned of combatants. No wonder that, up to now, challengers have been thin on the ground! They cannot expect much support from anthropological colleagues, in whose eyes to meddle with ‘evolutionary biology’ is generally to be tarred with the same brush. Neo-Darwinists, for their part, have developed a bruising rhetoric of ridicule and contempt for what they see as woolly-minded social science. Critics who may have read a good deal more evolutionary theory than neo-Darwinian theorists have ever read social science are liable to be rebuked like errant schoolchildren for misunderstanding elementary principles. It is all too easy, however, for the lack of dissenting anthropological voices to be interpreted as tacit assent. Indeed in their final summing up, Mesoudi et al. take the virtual absence of criticism from social scientific quarters in the open peer commentary on their article to mean ‘that the cultural evolutionary framework is no longer *easily* dismissed’ (375).

Indeed the difficulties are formidable. The following passage with which the authors introduce their article gives some indication of what one is up against:

While evolutionary biology has become enormously productive since Darwin’s theory of evolution was formulated, the discipline that professes to be most directly engaged in the study of culture – social or cultural anthropology – has been *much less demonstrably productive* over the same period, particularly in terms of *establishing a secure body of data and theory that earns and deserves the attention of researchers working in sister disciplines*. This is *increasingly acknowledged by many of its own practitioners* (e.g. Bennett, 1999; Bloch, 2000; Kuper, 1999). (329-330, my emphasis)

This is no throwaway remark. It is an apparently authoritative statement that appears in an article that has been subjected to peer review and subsequently published in a prestigious international journal. Not one of the commentators questioned it. Several endorsed it. Anyone reading the article might be forgiven for concluding that it is not contentious. This gives all the more reason, then, why it *must* be confronted. In what follows I shall consider, in turn, each of the four phrases from the passage that I have emphasized.

Productive biology, unproductive anthropology?

Has anthropology been *much less demonstrably productive* than ‘evolutionary biology’? Not at all. Both social and cultural anthropology have been hugely productive over the last century and a half, and especially in the last 50 years or so – precisely during the lifetime of the so-called ‘modern synthesis’ of neo-Darwinism. This productivity is demonstrable; it is attested by many now classic studies of social systems and cultural dynamics from around the world that have thrown much light on mechanisms and processes of stability and change.

Meanwhile, studies of culture change inspired by neo-Darwinian models have signally failed to account for anything that could not be far more satisfactorily explained by other means, and reviews of such studies are condemned to recycle the same tired, trivial and trivializing examples, from Tibetan polyandry to the changing head profiles of the teddy bear (335, 342). In any case, in the

absence of cross-disciplinary standards, it is difficult to see how the productivity of research in evolutionary biology and socio-cultural anthropology could sensibly be compared. What we can say, however, is that whereas studies in ‘evolutionary biology’ have been endlessly self-confirming due to the fundamental circularity of the underlying theory (as I show below), studies in social and cultural anthropology have been propelled by the relentless critique of founding epistemological assumptions. Holding its own axioms to be sacrosanct, evolutionary biology is unaccustomed to such critique, and perhaps for this reason perceives anthropology’s internal self-interrogation as symptomatic of a series of false starts rather than the progress it really is.

Mesoudi et al. are gracious enough to accept that the perceived lack of progress in anthropology is not due to any difference in average ability between anthropologists and biologists! Instead, they attribute the discrepancy to two factors. First, they claim that biologists are more prepared to make simplifying assumptions in order to render the problems they deal with tractable, while anthropologists are mired in depths of complexity that paralyse their analytic endeavours. Secondly, they argue that whereas all the sub-fields of ‘evolutionary biology’ are integrated under the single framework of neo-Darwinian theory, the disciplines of social science ‘remain relatively insular and isolated, both from each other and from the biological and physical sciences’ (330). Though some anthropologists might concur with these claims, I believe both to be false. Regarding the first, anthropologists simplify just as much as biologists do, for heuristic purposes or whenever it assists understanding. But their simplifications are of a different kind. They are more topological than statistical, concerned with highlighting the forms and patterns of relationship that contribute to the constitution of persons and their knowledge, rather than with the estimation of frequency distributions over populations of self-contained, information-bearing individuals.

So far as the second claim is concerned, while it is true that the social sciences in general, and anthropology in particular, are arenas of vigorous theoretical debate, it is not the case that these disciplines are insulated from one another. Look at the bibliography for any article in social or cultural anthropology, and you will likely find references to work in fields across the entire spectrum from biology, archaeology and psychology on the one hand to sociology, history, linguistics and philosophy on the other. Indeed, anthropology has always looked beyond its borders for sources of theoretical inspiration, and has sought creative conjunctions between ideas that other disciplines may have maintained in separate compartments. This eclecticism is the very source of its openness and vitality. Conversely, the hegemony of the neo-Darwinian paradigm in ‘evolutionary biology’ has effectively closed it off, locking it up within a hermetically sealed, intellectual universe of its own. The inmates of this shuttered universe can talk to no one but themselves, or to occasional converts from other disciplines who have elected to join them in their self-imposed exile and who are routinely paraded as evidence of the paradigm’s multi-disciplinary ambition. The blinkered outlook of ‘evolutionary biology’ has not only led to its estrangement from anthropology and other social sciences. It has also left it unable and unwilling to countenance alternative approaches even within the fields of biology and psychology. Yet as I show below, alternatives do exist.

The circle of data and theory

In the passage cited above, Mesoudi et al. state that it is above all in *establishing a secure body of data and theory* that ‘evolutionary biology’ has demonstrated its superiority

over social and cultural anthropology. The implications are that the empirical materials of anthropology are relatively insecure and its theories without solid foundation. Neither implication is justified. Anthropologists have amassed a vast corpus of fine-grained ethnographic data, based on long and painstaking fieldwork. These data are, for the most part, qualitative, and are contextually embedded in a way that allows the recovery and interpretation of their meanings. It is in this contextual grounding that their security lies.

For Mesoudi et al., however, such grounding is a source of unwanted complexity that has to be discarded in order that data can be transformed into quantities susceptible to 'rigorous mathematical treatments of cultural change inspired by population genetic models' (331). In this process of distillation their security is fatally compromised. Divorced from their original contexts and superimposed upon the 'rich theoretical groundwork for analysing culture in terms of modern evolutionary theory' (331), the data lose any meaning they might once have had. Henceforth their significance is derived from the theory, not from the world.

How secure, then, is the theory? Mesoudi et al., along with fellow 'evolutionary biologists', are convinced of its universal validity. For anthropologists, on the other hand, the premises on which it rests are, at the very least, open to interrogation. There is, first of all, the question of how an approach to evolution couched in terms of the replication, transmission and distribution of 'cultural traits' can accommodate historical agency. Recall that cultural traits are supposed to adapt to their environment by means of humans, rather than humans adapting by means of their cultural knowledge and skills. In this topsy-turvy world, it seems, human beings are but the means by which traits propagate themselves in an environment. There are indeed good reasons why most anthropologists abandoned the language of cultural traits half a century ago, and it behoves anyone seeking to reinstate this language to attend to them. As biological anthropologist Agustín Fuentes notes, in one of the few genuinely critical contributions to the open peer commentary, the authors of the target article 'use the term "cultural trait" at least 27 times without offering an explicit definition' (354). Most anthropologists, he correctly surmises, will find these usages problematic.

Secondly, there is the question of what actually evolves. For 'evolutionary biology' it is normally taken to be the so-called genotype. Does there, then, exist some cultural analogue of the genotype? Opinion on the matter is divided even among 'evolutionary biologists' themselves, as Robert Aunger testifies in his comment (347). Either way, however, the very assumption that information is pre-encoded, in genes or culture, prior to its phenotypic expression in the forms and behaviour of the individuals who carry it, implies that there exists some 'reading' of the genetic or cultural 'code' that is independent of the social and environmental contexts in which those individuals grow up and live their lives.

For Darwinian 'evolutionary biology' this assumption is axiomatic. 'Culturally transmitted semantic information', write Mesoudi et al., 'may be *expressed* in a variety of forms' (369, original emphasis). For them, this is a statement of the obvious. Social and cultural anthropologists, however, who have long emphasized the contextuality of meaning, will find it deeply problematic. If meaning is emergent within contexts of interaction, then how can it pre-exist the processes that give rise to it? If it does not, then how can it be 'expressed'?

A third question, arising from this, has to do with the concept of transmission. Are we to understand that cultural information is transmitted, from head to head, independently and in advance of its expression? Many theories of social or observational learning do indeed make this

assumption. It has however been comprehensively discredited by practically every anthropological study of how learning actually takes place in real-world contexts.

Even setting these three questions aside, we are still left with a fourth that eclipses all the others. How can a theory of cultural evolution, modelled on the principles of 'evolutionary biology', be other than completely circular? Following in the footsteps of other neo-Darwinian culture theorists, Mesoudi et al. define culture as transmitted information (ideas, knowledge, beliefs, values, skills, attitudes) that affects the behaviour of individuals. They then go on to announce that there is 'ample evidence that culture plays a powerful role in determining human behaviour and cognition' (331). Culture is anything that determines what humans think and do, *ergo* what humans think and do is determined by culture! Nor is this circularity limited to neo-Darwinian reasoning about culture. The same goes for its thinking about genes. To establish the genotype of an organism, 'evolutionary biology' works backwards from its outward, phenotypic form and behaviour by factoring out variation due to environmental experience so as to arrive at a context-independent description, only to declare that its form and behaviour are expressions, within a particular environmental context, of an evolved genotype. The concept of 'trait', whether applied to genetic or cultural characters, at once embodies and conceals this circularity.

As I have already noted, alternative theories *are* available. In both anthropology and psychology there have been many attempts, partly inspired by the classic work of Gregory Bateson, to transcend the polarity between biology and culture, to identify the mind with the pathways of the organism's sensory involvement in its surroundings rather than as a container for semantic content, and thereby to develop a holistic, ecological framework that would restore human beings and their activities to the continuum of organic life (Bateson 1980, Clark 1997, Ingold 1990, 2000, 2004). The 'developmental systems theory' (DST) pioneered by Susan Oyama and her colleagues offers a way of thinking about evolution that also recognizes how information is emergent within developmental processes rather than transmitted in advance of them (Oyama, Griffiths and Gray 2001). In his comment, Fuentes writes that DST, 'with its emphasis on joint determination by multiple causes, extended inheritance, context sensitivity and contingency, and development as construction [...] provides a more complex and contingent, but ultimately more satisfying, model for understanding homologies between biological and cultural systems' (354-355).

I would go one step further, however, to suggest that developmental thinking allows us to recognize that we are not dealing with separate but parallel systems, respectively biological and cultural, but rather that the biological process of development, of the living human organism in its environment, *is* precisely the process by which cultural knowledge and skills are inculcated and embodied. In this process, as anthropological studies of learning inspired by Vygotskian activity theory have shown, knowledge is not simply passed on ready-made, but undergoes continual regeneration through guided rediscovery within social contexts of interaction between instructors and novices (Chaiklin and Lave 1993, Cole 1996, Rogoff 2003).

Anthropologists, the new savages

None of this work, however, is referenced by Mesoudi et al. Apparently – to return to the passage cited earlier – it *neither earns nor deserves their attention*. Of the approximately 230 sources cited in the target article I counted just eight references to the work of social and cultural anthropologists, most of them very dated. Since, as evolutionary psychologist Jerome H. Barkow comments, 'sociocultural anthropology has clearly not progressed in the cumulative

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- Rogoff, B. 2003. *The cultural nature of human development*. Oxford: Oxford University Press.

fashion of evolutionary biology' (348), there is no need to bother with more recent work. After all, even anthropologists would agree! Thus Barkow finds Jack Goody (1982) admitting that anthropology 'tends to mistake mere changes in emphasis for progress' (348). Moreover the relative weakness and insecurity of anthropological data, method and theory have been *increasingly acknowledged* – say Mesoudi et al. – *by many of its own practitioners*.

Who are these practitioners? Reference is made to works by John Bennett (1999), Maurice Bloch (2000) and Adam Kuper (1999). These authors complain about a tendency among social and cultural anthropologists, also noted by Eriksen, to hang their work about with arcane and obfuscating prose. Bloch is cited as having written that cultural anthropology 'with time, has become theoretically more and more vague, pretentious and epistemologically untenable' (2000: 202). If true, this is indeed regrettable; however the same tendency can be found in most fields of academic study, and 'evolutionary biology' is certainly no exception. What is intolerable, however, is that anthropology should be held to ransom by the nostalgic lamentations of a handful of senior practitioners. To parade their words as evidence of disciplinary insolvency, preparatory to a hostile takeover, is preposterous.

One of the ironies of the approach proposed by Mesoudi et al., given their appeal to Darwin, is its relentless drive to divide culture from biology, as though each had its own parallel information store, inheritance track, copying mechanism and substantive content. The fact that a great deal of recent anthropological work has been devoted to critiquing this division and the dichotomy between mind and body on which it rests – to such an extent that it now appears almost as 'old hat' within the discipline – has passed these authors by. Instead they continue to wonder, as do many contributors to the peer commentary, why anthropologists remain so resistant to 'evolutionary biology'. Far from raising any doubts about the validity of their own programme, this resistance is invariably ascribed to a mixture of prejudice and error. Perhaps anthropologists simply harbour an irrational antipathy to science of any kind (375). Perhaps they still confuse Darwinism with the idea of progress central to 19th-century theories of the evolution of culture and society – to which Darwin, of course, fully subscribed (331). Or perhaps, on the contrary, there is no confusion at all but rather – as suggested in an extraordinary comment from evolutionary archaeologist Michael J. O'Brien – a recidivist desire to 'retreat to the cozy confines of nineteenth-century unilinear and progressive cultural evolutionism of Tylor and Morgan' (359). Even more curiously, philosophers Daniel Dennett and Ryan McKay suggest that what thinkers in the humanities find abhorrent about Darwinian evolutionary perspectives is their apparent replacement of 'freedom of will, rational authorship, and artistic genius' with 'mindless random mutation and mechanical selection' (353), failing to recognize that it is the very opposition between freedom and necessity, and the models of creativity based on it, that have been the focus of much humanistic critique, in both anthropology and other disciplines.

Indeed, what advocates of the grand synthesis of 'evolutionary biology' seem unable to grasp is that there may be principled reasons why many social and cultural anthropologists find neo-Darwinian perspectives uncongenial. They might care to listen to and respond to these reasons instead of turning a deaf ear, caricaturing anthropology in terms of an image that is at least 50 years out of date and then accusing the discipline of having failed to progress. This is rather like treating adults like children and then accusing them of having failed to grow up. It was, of course, in exactly such a way that Victorian anthropologists treated the 'savages' of their acquaintance. In

FORTHCOMING

PATRICK LAVIOLETTE

dangerous sports

CARL CATER & PAUL CLOKE

adventure tourism

TIM DANT & BELINDA WHEATON

windsurfing

ALLEN ABRAMSON

rockclimbing

M.A. FALZON

hunting and ecology in the Mediterranean

JONATHAN MARKS

Darwin meets Durkheim: biological classification

JAN MARGRY & CRISTINA SÁNCHEZ-CARRETERO

spontaneous memorials to violent deaths

CHRISTINE A. KRAY

women as border in the shadow of Cancún

ELS VAN DONGEN

ethnography on bed

The descent of man, Darwin wrote of how, in the advance of civilization, nations with greater numbers of men well endowed with capacities of reason and intellect are bound to prevail over those less favoured (1871: 219).

In the eyes of 'evolutionary biologists', it seems, social and cultural anthropologists are the new savages, locked in a struggle for existence in which they are bound to succumb. If this seems an overstatement, consider the following prognosis from Barkow. 'Humanities-oriented anthropologists', he asserts, 'will simply lose the turf war as policy-makers and the educated public turn to the hypothesis testers, the data gatherers, the mathematical model builders for their understanding of human societies' (349).

I am not an advocate of turf wars. I am seeking constructive rather than destructive engagement. But I do believe that we anthropologists need to respond to the challenge of 'evolutionary biology' in terms more robust and forthright than we have used up to now. I have been depressed by the timidity and ambivalence with which many anthropologists have reacted to the challenge, if they have reacted at all, and by their willingness to bend over backwards to reach an accommodation with a pseudo-biological fundamentalism that compromises everything for which anthropology rightfully stands.

By all means let us seek a way of embracing human history and culture within a wider concept of evolution: not, however, by reducing history to a reconstructed phylogeny of cultural traits but by releasing the concept of evolution itself from the stranglehold of neo-Darwinian thinking, allowing us to understand the self-organizing and transformational dynamics of fields of relationships among both human and non-human beings. If, as Kuper (1994: 1) asserts, 'we are all Darwinians now', then, by the same token, we are all Marxians, Weberians, Durkheimians, Boasians, and so on. That is to say, we acknowledge Darwin as one of many thinkers who have fundamentally shaped our modern understanding of life and its conditions, but do not pretend – as do neo-Darwinian proselytes – to find in his work a holy grail that consigns all else to worthless idolatry.

We must strive to ensure that everyone, both inside and outside the academy, understands that our subject seeks a generous, comparative but nevertheless critical understanding of human being and knowing in the one world we all inhabit. It both *earns and deserves* the attention of all thinking people. But we can only gain such attention by making our voices heard. ●